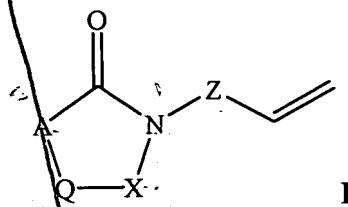


WHAT IS CLAIMED IS:

1 1. A compound having the formula:



2 wherein:

3 A is a member selected from the group consisting of NH , $\text{N}-\text{R}^8$ and CR^1R^2 ,

4 wherein R^8 is a halogen;

5 R^1 and R^2 , are each independently selected from the group consisting of
6 optionally substituted ($\text{C}_1\text{-}\text{C}_6$)alkyl, optionally substituted ($\text{C}_2\text{-}\text{C}_6$)alkenyl, optionally
7 substituted ($\text{C}_2\text{-}\text{C}_6$)alkynyl, optionally substituted cycloalkyl, optionally substituted ($\text{C}_1\text{-}$
8 C_6)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;

9 or, R^1 and R^2 and the carbon to which they are bound join to form an
10 optionally substituted carbocyclic or optionally substituted heterocyclic ring;

11 Q is a member selected from the group consisting of $\text{C}(\text{O})$, NH , $\text{N}-\text{R}^9$ and
12 CR^3R^4 , wherein R^9 is a halogen;

13 R^3 and R^4 , are each independently selected from the group consisting of
14 optionally substituted ($\text{C}_1\text{-}\text{C}_6$)alkyl, optionally substituted ($\text{C}_2\text{-}\text{C}_6$)alkenyl, optionally
15 substituted ($\text{C}_2\text{-}\text{C}_6$)alkynyl, optionally substituted cycloalkyl, optionally substituted ($\text{C}_1\text{-}$
16 C_6)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;

17 or, R^3 and R^4 and the carbon to which they are bound join to form an
18 optionally substituted carbocyclic or optionally substituted heterocyclic ring;

19 X is a member selected from the group consisting of $\text{C}(\text{O})$, $\text{C}(\text{O})-\text{NR}^5$ and
20 CR^6R^7 , wherein R^5 is a member selected from the group consisting of hydrogen, halogen,
21 optionally substituted ($\text{C}_2\text{-}\text{C}_6$)alkenyl and optionally substituted ($\text{C}_1\text{-}\text{C}_6$)alkyl;

22 R^6 and R^7 , are each independently selected from the group consisting of
23 optionally substituted ($\text{C}_1\text{-}\text{C}_6$)alkyl, optionally substituted ($\text{C}_2\text{-}\text{C}_6$)alkenyl, optionally
24 substituted ($\text{C}_2\text{-}\text{C}_6$)alkynyl, optionally substituted cycloalkyl, optionally substituted ($\text{C}_1\text{-}$
25 C_6)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;

26 or, R^6 and R^7 and the carbon to which they are bound join to form an
27 optionally substituted carbocyclic or optionally substituted heterocyclic ring; and

29 Z is a member selected from the group consisting of optionally substituted
30 (C₁-C₃)alkylene, C(O), or a single bond.

1 2. The compound of claim 1, wherein: A is NH and Z is CH₂.

1 2. The compound of claim 1, wherein: A is CR¹R², wherein R¹ and
2 R², are each optionally substituted (C₁-C₆)alkyl.

1 2. The compound of claim 3, wherein: R¹ and R², are each (C₁-
2 C₃)alkyl.

1 2. The compound of claim 1, wherein: A is CR¹R², and wherein R¹
2 and R² and the carbon to which they are bound join to form an optionally substituted
3 carbocyclic or optionally substituted heterocyclic ring.

1 2. The compound of claim 5, wherein: R¹ and R² and the carbon to
2 which they are bound join to form an optionally substituted carbocyclic ring.

1 7. The compound of claim 1, wherein: Q is C(O).

1 8. The compound of claim 1, wherein: Q is NH.

1 9. The compound of claim 1, wherein: Q is CR³R⁴, wherein R³ and
2 R⁴, are each optionally substituted (C₁-C₆)alkyl.

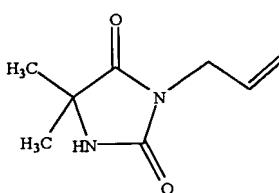
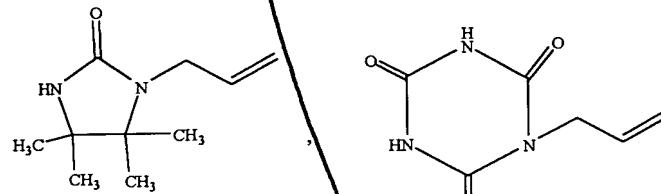
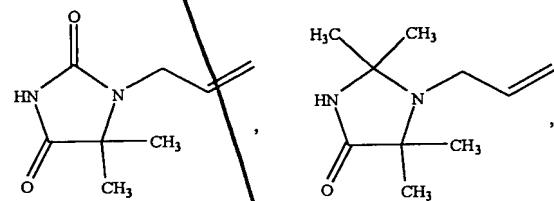
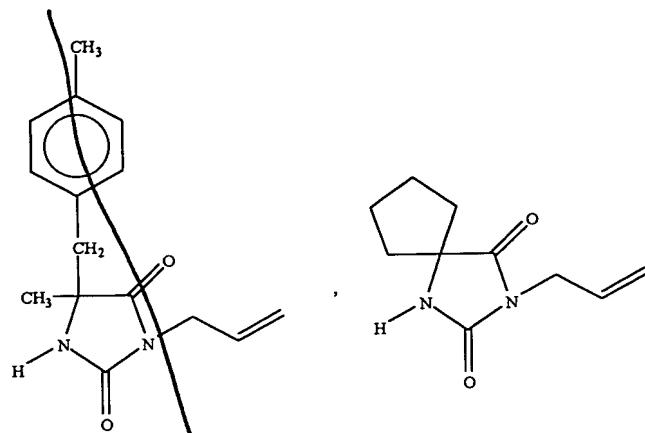
1 10. The compound of claim 1, wherein: X is CR⁶R⁷, wherein R⁶ and
2 R⁷, are each optionally substituted (C₁-C₆)alkyl.

1 11. The compound of claim 1, wherein: X is C(O)NH.

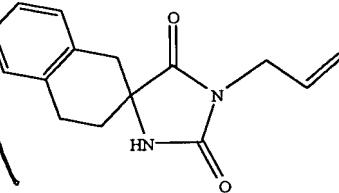
1 12. The compound of claim 1, wherein: Z is C(O).

1 13. The compound of claim 1, said compound is a member selected
2 from the group consisting of

Sub A³
Contd



and



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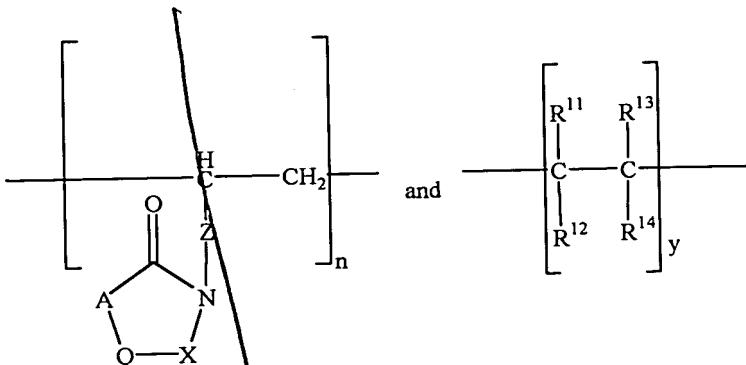
14. The compound of claim 1, said compound having the formula

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15. A polymer comprising a mixture of monomeric units having the



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5 wherein:

6 A is a member selected from the group consisting of NH, N-R⁸ and CR¹R²,

7 wherein R⁸ is a halogen;

8 R¹ and R², are each independently selected from the group consisting of
9 optionally substituted (C₁-C₆)alkyl, optionally substituted (C₂-C₆)alkenyl, optionally
10 substituted (C₂-C₆)alkynyl, optionally substituted cycloalkyl, optionally substituted (C₁-
11 C₆)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;

12 or, R¹ and R² and the carbon to which they are bound join to form an
13 optionally substituted carbocyclic or optionally substituted heterocyclic ring;

14 Q is a member selected from the group consisting of C(O), NH, N-R⁹ and
15 CR³R⁴, wherein R⁹ is a halogen;

16 R³ and R⁴, are each independently selected from the group consisting of
17 optionally substituted (C₁-C₆)alkyl, optionally substituted (C₂-C₆)alkenyl, optionally
18 substituted (C₂-C₆)alkynyl, optionally substituted cycloalkyl, optionally substituted (C₁-
19 C₆)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;

20 or, R³ and R⁴ and the carbon to which they are bound, join to form an
21 optionally substituted carbocyclic or optionally substituted heterocyclic ring.

22 X is a member selected from the group consisting of C(O)-NR¹⁰ and
23 CR⁶R⁷, wherein R¹⁰ is a member selected from the group consisting of hydrogen,
24 halogen, optionally substituted (C₂-C₆)alkenyl and optionally substituted (C₁-C₆)alkyl;

25 R⁶ and R⁷, are each independently selected from the group consisting of
26 optionally substituted (C₁-C₆)alkyl, optionally substituted (C₂-C₆)alkenyl, optionally
27 substituted (C₂-C₆)alkynyl, optionally substituted cycloalkyl, optionally substituted (C₁-
28 C₆)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;

29 or, R⁶ and R⁷ and the carbon to which they are bound join to form an
30 optionally substituted carbocyclic or optionally substituted heterocyclic ring;

31 Z is a member selected from the group consisting of optionally substituted
32 (C₁-C₃)alkylene, C(O), or a single bond;
33 R¹¹ is a member selected from the group consisting of hydrogen, halogen,
34 hydroxyl, cyano, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₁-C₆)alkoxy, (C₁-C₆)alkylcarbonyl, (C₁-
35 C₆)alkylcarboxyl, aldehydo, amido, aryl and heterocyclyl;
36 R¹² is a member selected from the group consisting of hydrogen, halogen,
37 hydroxyl, cyano, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₁-C₆)alkoxy, (C₁-C₆)alkylcarbonyl, (C₁-
38 C₆)alkylcarboxyl, aldehydo, amido, aryl and heterocyclyl;
39 R¹³ is a member selected from the group consisting of hydrogen, halogen,
40 hydroxyl, cyano, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₁-C₆)alkoxy, (C₁-C₆)alkylcarbonyl, (C₁-
41 C₆)alkylcarboxyl, aldehydo, amido, aryl and heterocyclyl;
42 R¹⁴ is a member selected from the group consisting of hydrogen, halogen,
43 hydroxyl, cyano, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₁-C₆)alkoxy, (C₁-C₆)alkylcarbonyl, (C₁-
44 C₆)alkylcarboxyl, aldehydo, amido, aryl and heterocyclyl; and
45 n and y are each independently an integer from 1 to 250 inclusive.

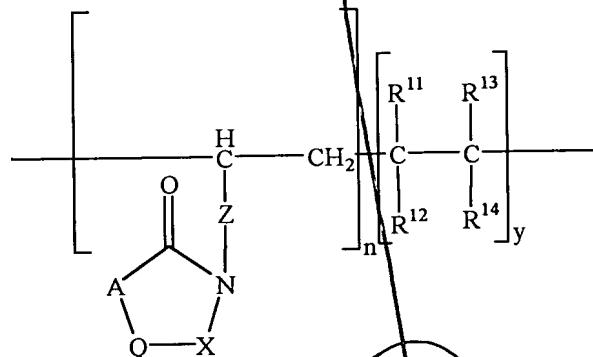
- 1 16. The polymer of claim 15, wherein: n is 1 and y is 1.
- 1 17. The polymer of claim 15, wherein: A is NH and Z is CH₂.
- 1 18. The polymer of claim 15, wherein: A is CR¹R², wherein R¹ and R²,
2 are each optionally substituted (C₁-C₆)alkyl.
- 1 19. The polymer of claim 18, wherein: R¹ and R², are each (C₁-
2 C₃)alkyl.
- 1 20. The polymer of claim 15, wherein: A is CR¹R², and wherein R¹
2 and R² and the carbon to which they are bound join to form an optionally substituted
3 carbocyclic or optionally substituted heterocyclic ring.
- 1 21. The polymer of claim 20, wherein: R¹ and R² and the carbon to
2 which they are bound join to form an optionally substituted carbocyclic ring.
- 1 22. The polymer of claim 15, wherein: Q is C(O).
- 1 23. The polymer of claim 15, wherein: Q is NH.

1 **24.** The polymer of claim 15, wherein: Q is CR³R⁴, wherein R³ and R⁴,
2 are each optionally substituted (C₁-C₆)alkyl.

1 **25.** The polymer of claim 15, wherein: X is CR⁶R⁷, wherein R⁶ and R⁷,
2 are each optionally substituted (C₁-C₆)alkyl.

1 **26.** The polymer of claim 15, wherein: X is C(O)NH.

1 **27.** The polymer of claim 15, having the polymeric unit of the
2 formula:

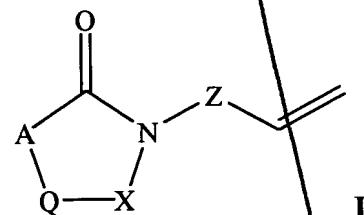


3 wherein n is 1 and y is 1.

4 **28.** The polymer of claim 15, wherein said polymer is a film.

1 **29.** A textile material comprising a polymer of claim 15.

1 **30.** A method for making a polymer, said method comprising:
2 admixing a compound having the formula:



3 **wherein:**

4 A is a member selected from the group consisting of NH, N-R⁸ and CR¹R²,

5 wherein R⁸ is a halogen;

6 R¹ and R², are each independently selected from the group consisting of

7 optionally substituted (C₁-C₆)alkyl, optionally substituted (C₂-C₆)alkenyl, optionally

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9 substituted (C_2-C_6)alkynyl, optionally substituted cycloalkyl, optionally substituted (C_1-
10 C_6)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;
11 or, R^1 and R^2 and the carbon to which they are bound join to form an
12 optionally substituted carbocyclic or optionally substituted heterocyclic ring;
13 Q is a member selected from the group consisting of $C(O)$, NH , $N-R^9$ and
14 CR^3R^4 , wherein R^9 is a halogen;
15 R^3 and R^4 , are each independently selected from the group consisting of
16 optionally substituted (C_1-C_6)alkyl, optionally substituted (C_2-C_6)alkenyl, optionally
17 substituted (C_2-C_6)alkynyl, optionally substituted cycloalkyl, optionally substituted (C_1-
18 C_6)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;
19 or, R^3 and R^4 and the carbon to which they are bound join to form an
20 optionally substituted carbocyclic or optionally substituted heterocyclic ring;
21 X is a member selected from the group consisting of $C(O)$, $C(O)-NR^5$ and
22 CR^6R^7 , wherein R^5 is a member selected from the group consisting of hydrogen, halogen,
23 optionally substituted (C_2-C_6)alkenyl and optionally substituted (C_1-C_6)alkyl;
24 R^6 and R^7 , are each independently selected from the group consisting of
25 optionally substituted (C_1-C_6)alkyl, optionally substituted (C_2-C_6)alkenyl, optionally
26 substituted (C_2-C_6)alkynyl, optionally substituted cycloalkyl, optionally substituted (C_1-
27 C_6)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;
28 or, R^6 and R^7 and the carbon to which they are bound join to form an
29 optionally substituted carbocyclic or optionally substituted heterocyclic ring; and
30 Z is a member selected from the group consisting of optionally substituted
31 (C_1-C_3)alkylene, $C(O)$, or a single bond,
32 with a vinyl monomer in a reaction mixture thereby making said polymer.

1 **31.** The method of claim 30, wherein said vinyl monomer is a member
2 selected from the group consisting of an acrylic monomer, a monofunctional vinyl
3 monomer, a polyfunctional vinyl monomer and mixtures thereof.

1 **32.** The method of claim 30, wherein said reaction mixture further
2 comprises a free radical initiator.

1 **33.** The method of claim 31, wherein said vinyl monomer is selected
2 from the group consisting of acrylonitrile, methacrylate, vinyl acetate and mixtures
3 thereof.

1 34. The method of claim 30, further comprising treating said polymer
2 with a halogenated solution.

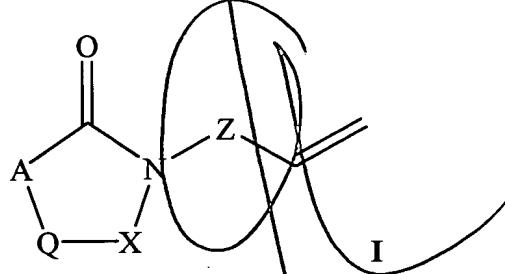
1 35. The method of claim 30, further comprising a second polymer in
2 said reaction mixture.

1 36. The method of claim 35, wherein said second polymer is a member
2 selected from the group consisting of a plastic, a rubber, a textile material, a paint, a
3 surface coating and an adhesive.

1 37. A polymer, said polymer prepared by the method of claim 30.

1 38. A polymer, said polymer prepared by the method of claim 34.

1 39. A method for chemically modifying a polymer, said method
2 comprising:
3 admixing said polymer in a reaction mixture with a compound having the
4 formula:



5 wherein:

6 A is a member selected from the group consisting of NH, N-R⁸ and CR¹R²,
7 wherein R⁸ is a halogen;

8 R¹ and R², are each independently selected from the group consisting of
9 optionally substituted (C₁-C₆)alkyl, optionally substituted (C₂-C₆)alkenyl, optionally
10 substituted (C₂-C₆)alkynyl, optionally substituted cycloalkyl, optionally substituted (C₁-
11 C₆)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;

12 or, R¹ and R² and the carbon to which they are bound join to form an
13 optionally substituted carbocyclic or optionally substituted heterocyclic ring;

14 Q is a member selected from the group consisting of C(O), NH, N-R⁹ and
15 CR³R⁴, wherein R⁹ is a halogen;

17 R³ and R⁴, are each independently selected from the group consisting of
18 optionally substituted (C₁-C₆)alkyl, optionally substituted (C₂-C₆)alkenyl, optionally
19 substituted (C₂-C₆)alkynyl, optionally substituted cycloalkyl, optionally substituted (C₁-
20 C₆)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;
21 or, R³ and R⁴ and the carbon to which they are bound join to form an
22 optionally substituted carbocyclic or optionally substituted heterocyclic ring;
23 X is a member selected from the group consisting of C(O), C(O)-NR⁵ and
24 CR⁶R⁷, wherein R⁵ is a member selected from the group consisting of hydrogen, halogen,
25 optionally substituted (C₂-C₆)alkenyl and optionally substituted (C₁-C₆)alkyl;
26 R⁶ and R⁷, are each independently selected from the group consisting of
27 optionally substituted (C₁-C₆)alkyl, optionally substituted (C₂-C₆)alkenyl, optionally
28 substituted (C₂-C₆)alkynyl, optionally substituted cycloalkyl, optionally substituted (C₁-
29 C₆)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;
30 or, R⁶ and R⁷ and the carbon to which they are bound join to form an
31 optionally substituted carbocyclic or optionally substituted heterocyclic ring; and
32 Z is a member selected from the group consisting of optionally substituted
33 (C₁-C₃)alkylene, C(O), or a single bond,
34 with a vinyl monomer thereby chemically modifying said polymer.

1 **40.** The method of claim 39, wherein Z is CH₂.

1 **41.** The method of claim 39, wherein said vinyl monomer is a member
2 selected from the group consisting of an acrylic monomer, vinyl monomer and mixtures
3 thereof.

1 **42.** The method of claim 41, wherein said vinyl monomer is a member
2 selected from the group consisting of acrylonitrile, methacrylate, vinyl acetate and
3 mixtures thereof.

1 **43.** The method of claim 41, wherein said compound is present in said
2 reaction mixture in about 5 mole % to about 100 mole % relative to said vinyl monomer.

1 **44.** The method of claim 43, wherein said compound is present in said
2 reaction mixture in about 5 mole % to about 20 mole % relative to said vinyl monomer.

1 **45.** The method of claim 39, further comprising treating said
2 chemically modified polymer with a halogenated solution.

1 **46.** The method of claim 45, wherein said halogenated solution
2 comprises sodium hypochlorite.

1 **47.** A chemically modified polymer, said chemically modified polymer
2 prepared by the method of claim 39.

1 **48.** A chemically modified polymer, said chemically modified polymer
2 prepared by the method of claim 45.

1 **49.** A textile material having a cellulose surface with said chemically
2 modified polymer of claim 39, grafted thereto.

1 **50.** The method of claim 39, wherein said polymer is a member
2 selected from the group consisting of a plastic, a rubber, a textile material, a paint, a
3 surface coating, an adhesives, cellulose, a polyester, wood pulp, paper and a
4 polyester/cellulose blend.

1 **51.** The method of claim 50, wherein said textile material is cotton.

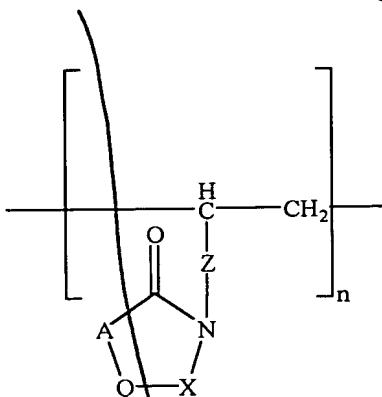
1 **52.** The process of claim 51, wherein said textile material is a member
2 selected from the group consisting of fabric, yarn and fiber.

1 **53.** The process of claim 50, wherein said textile material is a member
2 selected from the group consisting of a surgeon's gown, a cap, a mask, a surgical cover, a
3 patient drape, a carpeting, a bedding material, an underwear, a sock and a uniform.

1 **54.** The process of claim 39, wherein said process is regenerable. \ \ 2

1 **55.** The process of claim 39, wherein said process is durable. \ \ 2

1 **56.** A polymer comprising a monomeric unit having the formula:



2

3

4 wherein:

5 A is a member selected from the group consisting of NH, N-R⁸ and CR¹R²,

6 wherein R⁸ is a halogen;

7 R¹ and R², are each independently selected from the group consisting of
8 optionally substituted (C₁-C₆)alkyl, optionally substituted (C₂-C₆)alkenyl, optionally
9 substituted (C₂-C₆)alkynyl, optionally substituted cycloalkyl, optionally substituted (C₁-
10 C₆)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;

11 or, R¹ and R² and the carbon to which they are bound join to form an
12 optionally substituted carbocyclic or optionally substituted heterocyclic ring;

13 Q is a member selected from the group consisting of C(O), NH, N-R⁹ and
14 CR³R⁴, wherein R⁹ is a halogen;

15 R³ and R⁴, are each independently selected from the group consisting of
16 optionally substituted (C₁-C₆)alkyl, optionally substituted (C₂-C₆)alkenyl, optionally
17 substituted (C₂-C₆)alkynyl, optionally substituted cycloalkyl, optionally substituted (C₁-
18 C₆)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;

19 or, R³ and R⁴ and the carbon to which they are bound, join to form an
20 optionally substituted carbocyclic or optionally substituted heterocyclic ring.

21 X is a member selected from the group consisting of C(O)-NR¹⁰ and
22 CR⁶R⁷, wherein R¹⁰ is a member selected from the group consisting of hydrogen,
23 halogen, optionally substituted (C₂-C₆)alkenyl and optionally substituted (C₁-C₆)alkyl;

24 R⁶ and R⁷, are each independently selected from the group consisting of
25 optionally substituted (C₁-C₆)alkyl, optionally substituted (C₂-C₆)alkenyl, optionally
26 substituted (C₂-C₆)alkynyl, optionally substituted cycloalkyl, optionally substituted (C₁-
27 C₆)alkoxy, optionally substituted aryl and optionally substituted heteroaryl;

28 or, R⁶ and R⁷ and the carbon to which they are bound join to form an
29 optionally substituted carbocyclic or optionally substituted heterocyclic ring;

30 Z is a member selected from the group consisting of optionally substituted
31 (C₁-C₃)alkylene, C(O), or a single bond; and
32 n is an integer from 1 to 250 inclusive.

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